Separating Mixtures by Physical Means

Using Magnetic Properties

Materials

- Iron filings
- Sand
- Magnet
- Petri Dish

Procedure

1. Mix the sand and the iron filings in the petri dish
2. Stir the two substances.
    a. Circle the type of mixture you just created. (homogeneous / heterogeneous)
3. Using a magnet – (cover it with a piece of scratch paper first), separate the iron from the sand in your mixture.
4. Replace the iron filings and sand back to their original container

Explain why the salt and iron filings separated.

Using Distillation

Materials

- Water
- Salt
- Hot plate
- Small beaker
- Lid, dish

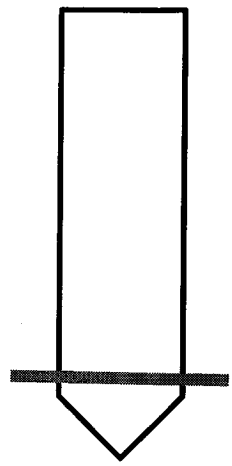
Procedure

1. Make a mixture with the salt and water.
2. Dip finger and taste the new mixture.
3. Circle the type of mixture you just created (homogeneous / heterogeneous)
4. Place the mixture in the beaker and heat it on high on the hotplate
5. Cover the beaker with a tinfoil tent. See demo table for example.
6. Collect the water dripping from the tinfoil tent.
7. Taste the new water.

Where did the salt go? _____

What is distillation? _____

Using Chromatography



Materials

- Coffee filter paper
- Pencil - Tape
- Water soluble pens
- Plastic cups

Procedure

1. Cut strips of filter paper 1 inch wide and 3-4 inches long
2. Trim one end of the strips to a point as shown
3. Using a felt-tip pen, make a dark line across the strip just above the pointed section
4. Place a small amount of water in the bottom of a clean cup
5. Wrap the strip around the pencil and secure with tape.
    a. (Make sure the tip of the strip is just touching the water when the pencil rests on top of the rim.)
6. Wait several minutes while the water flows up the strip by capillary action
7. Fill in the chart below

Original Color	**Colors found after separation**
Black	

What is chromatography and how does it work?

_____

_____

_____

_____

_____

Using Filtration

Materials

- Soap particles
- Salt
- Epson salt
- Coffee filters
- 6 Plastic cups (clear)

Procedure

1. Label two cups "control", label two "salt", label two "Epson"
2. Pour ¼ cup of the soapy water into one of each of the three different cups
3. Add a tsp of salt to the soap and water mixture in the "salt" cup
4. Add a tsp of Epson salts to the soap and water mixture in the "Epson" cup
5. Stir each cup, with a different stirring rod, for about 1 minute
6. Place coffee filters over the top of each of the three empty plastic cups
7. Push the filter down leaving about 6 cm between the bottom of the filter and the bottom of the cup
8. Pour the salt mixture into the "salt" filtered cup
9. Repeat with the other two cups

Observe what comes through the bottom of the filter and into the cup

- Salt: _____
- Epson Salt: _____
- Control: _____

Observe what is left on each of the filters

- Salt: _____
- Epson Salt: _____
- Control: _____

Why did some materials pass through and some materials didn't?